VOTICKY, Z.; TOMKO, J.

Alkaloids from Buxus sempervirens L. Pt.2. Coll Cz Chem 30 no.1:348-350 Ja '65.

1. Institute of Chemistry of the Slovak Academy of Sciences, Bratislava. Submitted April 22, 1964.

CZECHOSLOVAKIA

VOTICKY, Z.; TOMKO, J.; DOLEJS, L.; HANUS, V.

1.Chemical Institute, Slovak Academy of Sciences, Department of Alkaloids, Bratislava - (for Voticky and Tomko); 2. Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague, (for Dolejs); 3. Institute of Physical Chemistry, Czechoslovak Academy of Sciences, Prague (for Hanus).

Prague, Collection of Czechoslovak Chemical Communications, pp 3705-3710.

"Alkaloids from Buxus sempervirens L. Part 4: The structure of buxtauine."

(4)

TOMKO, Jozef, dr. inz. CSc.; VASSOVA, Anna, PhMr.

Alkaloids from Veratrum album subsp. lobelianum (Bernh.) Suessenguth. Pt.7. Chem zvesti 18 no.4:266-272 '64

1. Institute of Chemistry, Slovak Academy of Sciences, Department of Alkaloids, Bratislava, Dubravska cesta.

TOMKO, J.; BAUER, S.

Alkaloids of Veratrum album subsp. lobelianum (Bernh.) Soessenguth. Pt.8. Coll Cz Chem 29 no.10:2570-2574 O '64.

1. Slovak Academy of Sciences, Chemical Institute, Bratislava.

CZECHOSLOVAKIA

TOMKO, J; VOTICKY, L; BUDZIKIEWICZ, H; DURHAM, L. J.

Institute of Chemistry, Department of Alkaloids of the Slovak Academy of Sciences, Bratislava (for all)

Prague, Collection of Czechoslovak Chemical Communications, No 10, 1965, pp 3320-3323

"Alkaloids of Veratrum album Subsp. lobelianum (Bernh.) Suessenguth. X. Structure of Veramarine."

L 36019-66

ACC NR: AP6027339 SOURCE CODE: HU/0026/66/016/001/0001/0016

AUTHOR: Tomko, Jozsef

ORG: none

TITLE: Mass-service problems. Part 2

SOURCE: MTA. Matematikai es fizikai osztalyanak kozlemenyei, v. 16, no. 1, 1966, 1-16

TOPIC TAGS: highway transportation, road

ABSTRACT: [Part 1 of this series was published Ibid., Vol 15, 1965, pp 289-312] This instalment discusses operational effectiveness under conditions of occupancy and status of operational reserve under various operational conditions. The considerations presented were applied to calculations pertaining to a street crossing involving a main road and a secondary road, for cases in which the main road had one-way traffic, the main road had two-way traffic, and where various vehicle turning modes were permitted or prohibited. Equations were derived to assist in calculating the various traffic parameters involved. Orig. art. has: 26 formulas. [JPRS]

SUB CODE: 13 / SUBM DATE: 20Jun65 / ORIG REF: 001 / SOV REF: 003
OTH REF: 003

Card 1/1

TOMKO, K., inz.

Visit of professor Alfred Lange from Freiberg, German Democratic Republic, in Ziar nad Hronom. Hut listy 17 no.12:909 D '62.

TOMKO, Kamil, inz.

Czecholovak aluminum industry enters the second decade. Tech praca 16 no.3:191-193 Mr '64.

IONKOV, Iv., Prof.; MATEV, M.; TOMKOV, As.; GRIGOROVA, M.

Use of antistreptolysin test & of Waaler-Rose-Heller hemagglutination test in rheumatism and other joint diseases. Suvrem. med., Sofia 8 no.12: 38-44 1957.

1. Iz Propedevtichnata vutreshna klinika pri VMI--Sofiia (Direktor: prof. Iv. Ionkov). i Nauchnoizsledovatelskiia institut po epidemiologiia i mikrobiologiia (Direktor: Vl. Kalaidzhiev).

(STREPTOLYSIN, antagonists
antistreptolysin test in diag. of rheum. & joint dis. (Bul))
(HEMAGGLUTINATION,
Waaler-Rose-Heller test in diag. of rheum. & joint dis. (Bul))
(RHEUMATISM, diag.
antistreptolysin & Waaler-Rose-Heller hemagglutination tests (Bul))
(JOINTS, dis.
antistreptolysin & Waaler-Rose-Heller hemagglutination tests (Bul))

BULGARIA

As. TOMKOV, G. SHEIKOVA and D. STRAKHILOV, NIEM [Nauchen institut po epidemiologiya i microbiologiya, Scientific Institute for Epidemiology and Microbiology] and VMR [Abbreviation not identified] Military Hospital (Voenna bolnitsa pri VMR); Director (direktor) of NIEM; Vl. KALAIDZHIEV; Head (nachalnik) of Military Hospital T. IVANOV.

"Studies With Penicillin-Resistant Staphylococci."

Sofia, Eksperimentalna Meditsina i Morfologiya, Vol 1, No 3, 1962; pp 27-31.

Abstract [English summary modified]: Study of 53 penicillin-resistant and 28 -sensitive Staph. aureus strains, all clinical coagulase-positive isolates: type of hemolysis, fibrinolysis, phosphatase, catalase, mannite, gelatine, egg yolk, pigment formation, dehydrogenase, necrotizing property. Results lead to conclusion that penicillin resistance acquisition is correlated with complex changes of the enzymatic activity as well as pathogenicity regardless of the presence of the antibiotic. Three tables; 2 Bulgarian and 3 Western refs.

1/1

TOMKOV, Kazimierz

Chem abs v48
1-25-54
Fuels + Carbonization Products

(5)
Fuel

Effect of heating in the atmosphere of various gases on the plasticity of bituminous coals. Michał Choraży and Kazimierz Tomków. *Biul. Inst. Nauk.-Badawczego Przemysłu Węglowego* (Katowice), *Komun.* No. 31, 20 pp. (1948).—Samples of 7 Polish coals were heated for 30–45 min. at 100–180° in the atm. of air, N, NH_3, CO_2, steam, or SO_2, after which their plasticity range was detd. by the Gieseler method (*C.A.* 28, 4567⁶). The plasticity curves of oxidized samples are generally lower than those of unoxidized samples, but the changes in the curves and the max. are irregular and cannot be used as a basis for classifying the coals with respect to coking properties. The effect of N, NH_3, and CO_2 is slight, but that of steam is appreciable, particularly at temps. close to the beginning of the plasticity range. The oxidizing effect of SO_2 is greater than that of air. Bruno C. Metzner

TOMKOVA, J.

Distr: 4E2c

Influence of alkali sulfates on the activity of vanadium pentoxide in the catalytic oxidation of sulfur dioxide. Pavel Jirů, Dáša Tomková, Vladimír Jára, and Jarka Wańkova (Inst. anorg. Chem., Ústí n. Labem, Czech.). *Z. anorg. u. allgem. Chem.* 303, 121-6(1960).—X-ray diffraction data for different mixts. of V_2O_5 and Rb_2SO_4 or Cs_2SO_4 fused at 450–500° show formation of new compds. of approx. compn. $V_2O_5.Rb_2SO_4$ and $V_2O_5.Cs_2SO_4$. The catalytic activity of $V_2O_5.M_2SO_4$ (M = alkali metal) prepns. mixed with SiO_2 (V content = 6%) on the oxidn. of SO_2 increases with increasing at. no. of M over the temp. range 420–525°; at 420° the rate const. for the Rb or Cs prepn. is 9 times that for the K prepn. The activation energy is 70–80 kcal. and 30–40 kcal. in lower and higher temp. regions, resp.; the transition temp. between the 2 regions decreases with increasing at. no. of M from 525° (Li) to 460° (Rb or Cs).

Richard H. Jaquith

6
1

TOMKOVA, D.

Distr: 4E2c

5
1-mic. (4D).
1

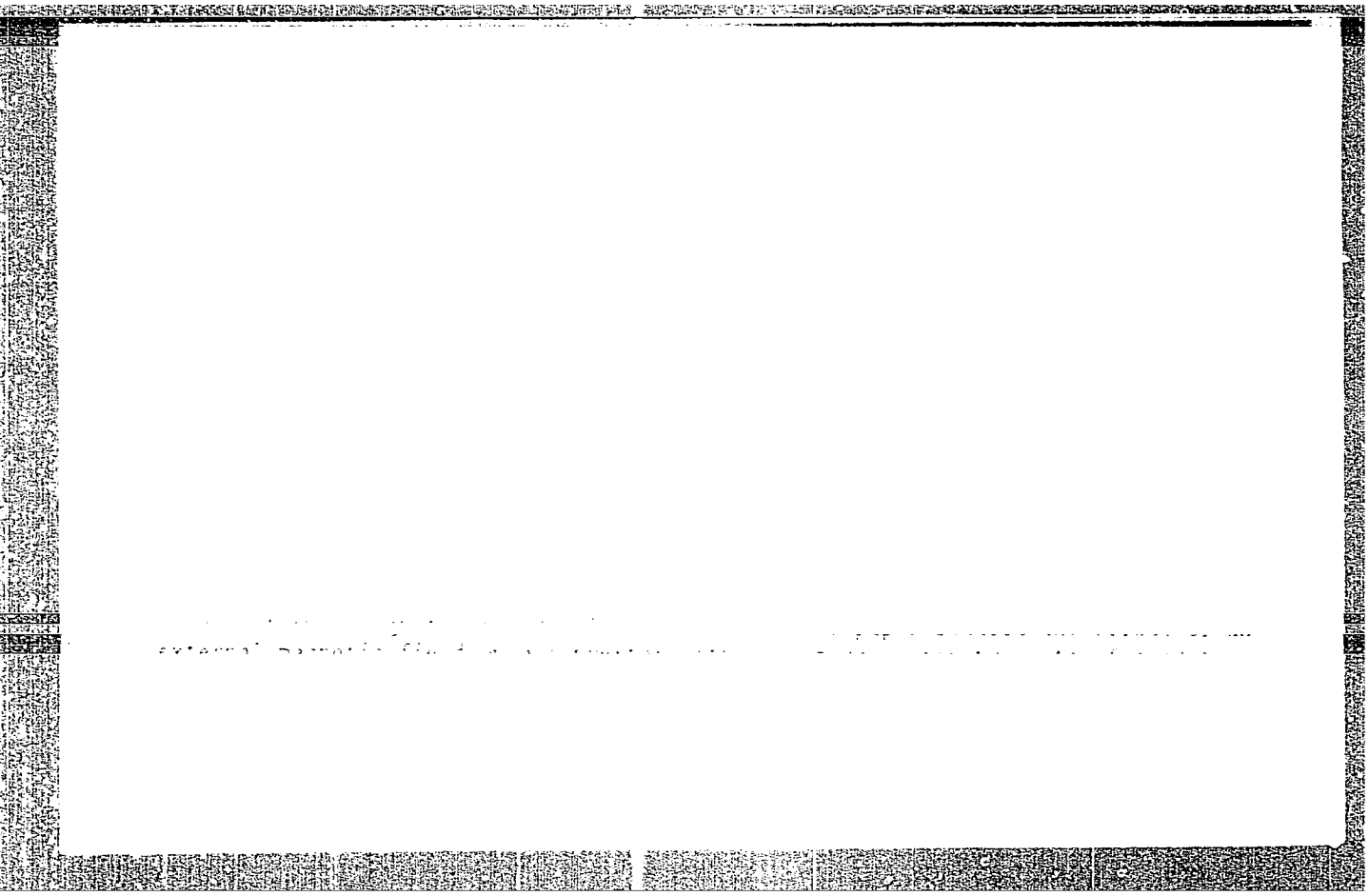
A thermogravimetric study of the thermal decomposition of the bisulfates of alkali metals. D. Tomková, P. Hrd, and J. Rosický (Výzkumný ústav anorg. chemie, Ústí n.L., Czech.). *Collection Czechoslov. Chem. Commun.* 25, 967-9 (1960).—The decompn. temps. of the hydrogen sulfates and pyrosulfates according to the reactions $MHSO_4 \rightarrow M_2S_2O_7$ and $M_2S_2O_7 \rightarrow M_2SO_4$ were detd. thermogravimetrically: $NaHSO_4.H_2O$ 205, 370; $KHSO_4$ 210, 395; $RbHSO_4$ 205, 445; $CsHSO_4$ 270°, 470°; these values indicate the beginnings of the 2 reactions given above. B. Erdős

1/1

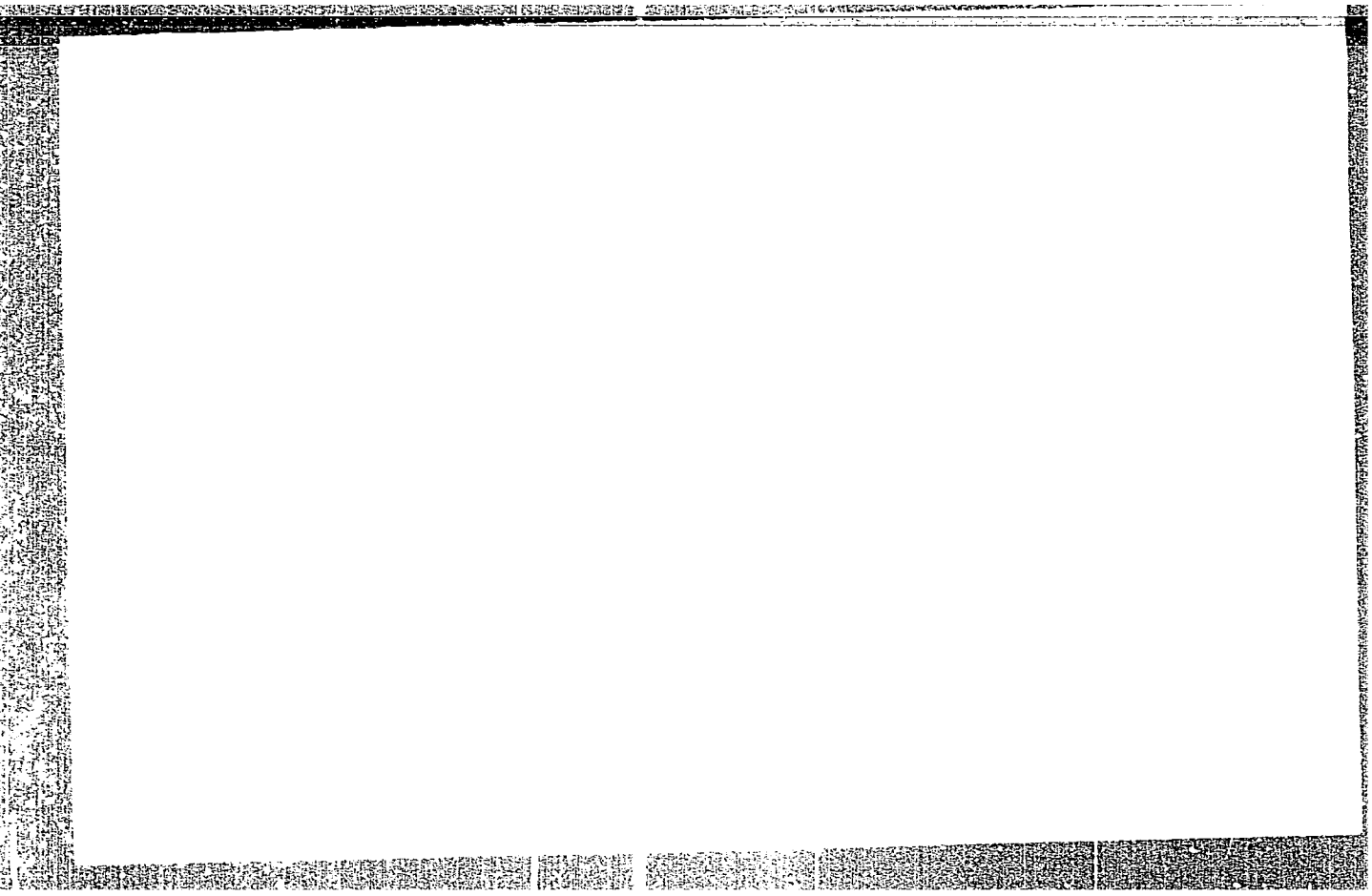
TOMKOVA, Dagmar, Inz.

Contamination standards for the canning industry. Prum potravin 15 no.11:576-577 N '64.

1. Research Institute of the Distillation and Canning Industry, Prague.



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756220010-7"



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001756220010-7"

30598
Z/037/61/000/006/004/004
E024/E135

24,2700 (1137,1482)

AUTHOR: Tomková, E.

TITLE: Direct conversion of thermal energy into electrical energy by means of thermoemission

PERIODICAL: Československý časopis pro fysiku, no.6, 1961, 516-534

TEXT: This paper is a review of published work on this subject and contains 21 references.
The main obstacle to the efficient operation of a diode for the direct conversion of thermal energy into electrical power is the formation of a space charge which causes a minimum of potential in the space between cathode and collector. K.G. Hernquist (Ref.1: K.G. Hernquist, M. Kanefsky, F.H. Norman, RCA Rev., Vol.19,(1958), 244) lists a number of methods for the removal of this minimum. H. Moss (Ref.2: Journ. Electronics, Vol.2(1957), 305) has derived a theory of such diodes operating without a potential minimum because of the close proximity of cathod and collector.
According to Moss, the largest possible power output per unit area of the cathode is:

Card 1/7

Direct conversion of thermal energy...

$$P_{max} = I_s \, (kT/e) \tag{18}$$

where: I_s is the saturated collector current density; R is the external load resistance (the internal resistance of the diode is neglected); the other symbols have their usual meaning. I_s is obtained when the potential difference between cathode and collector is zero. H.F. Webster (Ref.8: J. Appl. Phys. Vol.30, (1959), 488) derived the maximum power for the case when the potential minimum cannot be neglected. In this case we obtain:

$$P_{max} = \frac{I_s . k . T . a}{e} \tag{25}$$

The value of the parameter a is obtained from Fig.5, where a is plotted as a function of $(e/kT)(\varphi_c - \varphi_K)$ for various parameters K. φ_c is the work function of the collector, φ_K the work function of the cathode, and

Card 2/7

Direct conversion of thermal energy ..

$$K = 84.24 \cdot 10^{10} \frac{I_s \cdot s^2}{T^{\frac{3}{2}}} \qquad (24)$$

where s is the distance from collector to cathode. The efficiency of diodes as converters of thermal energy into electrical energy has been discussed by N.D. Morgulis and P.Marčuk (Ref.11: Ukrainskiy fizichesniy zhurnal, Vol.2 (1957), 379) and by J.M. Houston (Ref.12: J. Appl. Phys., Vol.30 (1959) 481). The theoretical efficiency is given by:

$$\eta = \frac{I_c(V_K - V_c - V_v)}{q_r + q_c + I_c\left(V_K + \frac{2kT}{e}\right)} \qquad (36)$$

where: q_r are the radiative heat losses; q_c are the heat losses due to conduction in the leads; I_c is the collector current; $V_K = \varphi_K + V_m$; $V_c = \varphi_c + \delta$; V_m is the minimum potential in the space charge, measured from the cathode; δ is the potential difference between the collector and the minimum potential;

Card 3/7

V_v is the voltage developed on the leads. Fig.8 shows η as a function of the temperature of the cathode (T) for various densities of emission current and for V_c = 1 Volt. Experimentally, P.M. Marčuk (Ref.13: Trudy instituta fiziki 1956, 3) has used a method of neutralising the space charge by positive Cs ions. The ions are formed by thermal ionization on the cathode and the Cs vapour serves the double purpose of neutralizing the space charge and reducing the work function of the collector. The conversion efficiency achieved in this experiment was 0.7% with a cathode temperature of 2400 °K. A similar arrangement was used by K.G. Hernquist et al. (Ref. 1). These authors obtained the dependence of the collector current I_c upon the voltage developed on the external resistance, $I_c R$ (Fig. 10). The contact potential difference between cathode and collector was 2.7 Volt. The maximum efficiency was 10.4% at T = 2910 °K. V.C. Wilson (Ref.15: J. Appl. Phys., Vol.30 (1959) 475) used a similar system but, instead of relying on the ionization of the caesium on the cathode, he used a separate source of ions. This led to improved efficiency of the diode, but only when the consumption of the ion

Direct conversion of thermal energy ...

source was not taken into consideration. G.N. Hatsopoulos and J. Kaye (Ref.4: J. Appl. Phys., V.29 (1958) 1124) used the method of close proximity of cathode and collector to avoid an undesirable space charge. They chose the distance $s = 0.025$ mm and used an indirectly heated molybdenum cathode and an identical collector. With $T_k = 1538$ °K and $T_c = 811$ °K they claimed an efficiency of almost 13% but, according to Ref.16 (a later paper) it was really only 10.7%. All the above mentioned experimental diodes used electric heating for the cathodes, i.e. converted electrical energy into electrical energy. G.M. Grover (Ref.17: Nucleonics Vol.17 (1959), 54) used the energy released in the fission of enriched uranium in the cathode when this was irradiated by neutrons in a reactor. He estimated the efficiency of his diode at 5% with an output of 30 Watt. The author concludes that, in spite of the present low efficiencies, the system might have future practical applications.
There are 12 figures, 1 table and 21 references: 6 Soviet-bloc and 15 non-Soviet-bloc. The most recent English language references read as follows:

4

30598
Z/037/61/000/006/004/004
Direct conversion of thermal energy .. E024/E135

Ref.16: W.B. Nottingham, G.N. Hatsopoulos, J. Kaye, J. Appl. Phys., Vol.30 (1959), 440.
Ref.18: K.G. Hernquist, Nucleonics, Vol.17 (1959), 49.
Ref.19: A.F. Dugan, J. Appl. Phys., Vol.31 (1960), 1397.
Ref.20: A. Schock, J. Appl. Phys., Vol.31 (1960), 1978.

ASSOCIATION: Katedra elektroniky a vakuové fysiky matematicko-fysikální fakulty Karlovy university, Praha (Department of Electronics and Vacuum Physics, Faculty of Mathematics and Physics, Charles University, Prague)

SUBMITTED: April 19, 1960

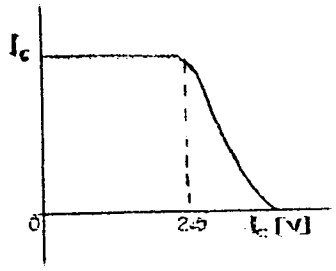


Fig. 10

Card 6/7

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Direct conversion of thermal energy ... Z/037/61/000/006/004/004
E024/E135

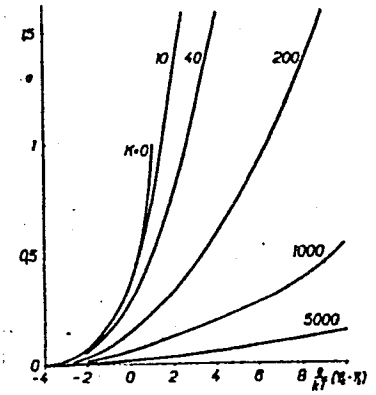

Fig. 5

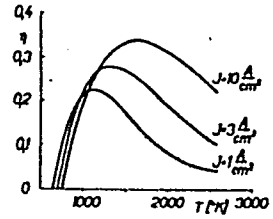

Fig. 8

Card 7/7

FAHNRICH, J.; TOMKOVA, E.

Thermionic energy converter in magnetic field. Chekhosl fiz zhurnal 15 no.4:276-286 '65.

1. Faculty of Mathematics and Physics of Charles University, Prague 2, Ke Karlovu 5. Submitted July 20, 1964.

Z/037/60/000/005/027/056
E192/E382

26.1630

AUTHOR: Tomková, E.

TITLE: Direct Transformation of Thermal Energy into Electric Energy by Means of Thermal Emission

PERIODICAL: Československý časopis pro fysiku, 1960, No. 5, p. 430

TEXT: Several diode systems employing either directly heated tungsten cathodes (the collector being in the form of molybdenum cylinders of various diameters) or a flat or cylindrical impregnated cathode were measured. The negative space charge of electrons was compensated by positive caesium ions produced by the thermal emission at the cathode. The effect of the presence of a metallic polonium deposited on a molybdenum base on the efficiency of the diodes was investigated.

ASSOCIATION: Katedra elektroniky a vakuové fysiky Karlovy university, Praha (Chair of Electronics and Vacuum Physics of Charles University, Prague)

Card 1/1

L 8190-66 EWT(1)/T IJP(c) AT

ACCESSION NR: AP5018473 CZ/0055/65/015/007/0526/0528

44,55 44,55

AUTHOR: Tomkova, E.; Fanhrich, J. 21,44,55

TITLE: Influence of ultraviolet radiation on a thermionic converter

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 15, no. 7, 1965, 526-528

TOPIC TAGS: UV irradiation, thermoelectric converter, cesium, temperature dependence, pressure effect, space charge

ABSTRACT: The purpose of the investigation was to obtain a source of positive ions to cancel out the space charge of the electrons in a thermionic energy converter operating with a low-temperature cathode (near 1000C). The authors describe tests in which the ions were provided by cesium vapor exposed to ultraviolet radiation. The experimental setup is shown in Fig. 1 of the Enclosure. The system was kept in a vacuum of 10^{-6} mm Hg, and the vapor pressure of the cesium could be controlled by varying the temperature of the furnace in which the entire assembly was kept. The results showed that the converter produces a maximum current at a cathode temperature below 1000C, and that an increase in the temperature leads to a decrease in the current. The reason for it is that the number of ions produced by photo ionization of the cesium is effective only up to a certain current density. At

21,44,55

Card 1/3

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L 8190-66

ACCESSION NR: AP5018473

higher temperature of the cathode (at higher termionic emission density) the space charge of the ions becomes negligible compared with the space charge of the electrons and its influence diminishes. Further tests with more intense ultraviolet light are planned. Orig. art. has: 3 figures.

ASSOCIATION: Faculty of Mathematics and Physics, Charles University, Prague, Czechoslovakia

SUBMITTED: 07Nov64 ENCL: 01 SUB CODE: EE

NR REF SOV: 000 OTHER: 000

Card 2/3

L 8190-66

ACCESSION NR: AP5018473

ENCLOSURE: 01

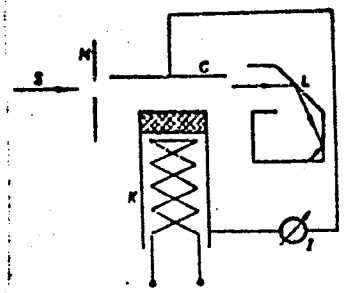


Fig. 1. Diagram of electrode system. *C* — collector, *K* — cathode, *L* — light trap, *M* — slot, *I* — milliammeter, *S* — direction of incident radiation.

nw

Card 3/3

POGREBNOV, N.I.; ZUBTSOVSKIY, V.N.; TOMKOVICH, I.I.

Some aspects of methods used in geological prospecting for coal in the buried eastern section of the greater Donets Basin. Razved. i okh.nedr 22 no.12:23-26 D '56. (MLRA 10:2)

1. Rostovskaya geologicheskaya ekspeditsiya.
(Donets Basin--Coal geology) (Prospecting)

POLAND / Chemical Technology. Chemical Products and Their Applications. Chemical Processing of Solid Fossil Fuels. H

Abs Jour: Ref Zhur-Khimiya, 1959, No 4, 13063.

Author : Tomkow, Kazimierz.
Inst : Not given.
Title : On the Chemical Reprocessing of Brown Coal in Poland.

Orig Pub: Przem. chem., 1958, 37, No 6, 391-394.

Abstract: The most important methods of chemical reprocessing of brown coal are reviewed: semicoking, gasification, extraction and hydrogenization. Characteristics are given of several deposits of Polish brown coal. -- Ya. Satunovskiy.

Card 1/1

TOMCZ, K.

Characteristics of the national resources of brown coal.. Biuletyn Glow.

p. 9 (Przeglad Gorniczy. Vol. 12, no. 7/8, July/Aug. 1956. Katowice, Poland)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2,
February 1958

TOMKOW, KAZIMIERZ.

Tomkow, Kazimierz. Przyrzd do szybkiego oznaczania wilgoci w weglu brunatnym i kamiennym. Datowice, Panstwowe Wydawn. Techniczne, 1952. 9 p. (Prace Glownego Instytutu Gornictwa. Seria B. Domunikat nr. 126) [Apparatus for a quick determination of moisture in brown and bituminous coal. English, French, and Russian summaries. bibl., diagrs.]

SO: MONTHLY LIST OF EAST EUROPEAN ACCESSIONS, LC, VOL. 3 no. 4, APRIL 1954.

TOMKOW, K.

"A Device For The Quick Determination Of Humidity In Coal And Lignite. Biuletyn" p. 6. (Przeglad Gorniczy, Vol. 9. no.3, Mar. 1953, Katowice)

SO: Monthly List of East European Accessions, Vol. 3, No. 2, Library of Congress, February, 1954, Uncl.

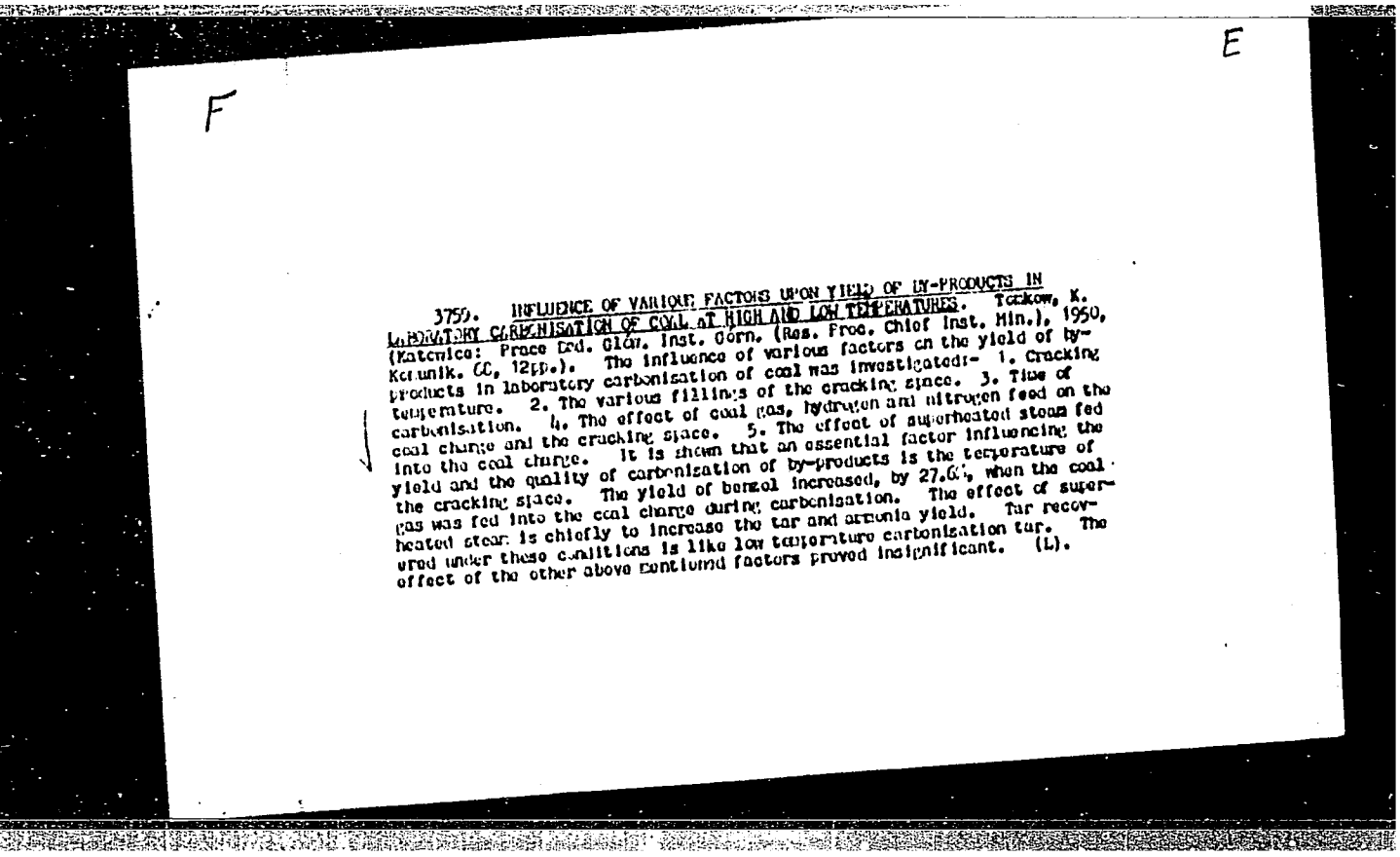
Polish Technical Abst.
No. 4, 1953
Mechanics, Electrotechnics, Power

2405 543.812:662.642:662.66

Tomkow K. Apparatus for Rapid Determination of Moisture in Brown and Bituminous Coal.
Przyrzad do szybkiego oznaczania wilgoci w weglu brunatnym i kamiennym. (Prace Gl. Inst. Gorn. No. 126), Katowice, 1952, PWT, 6 pp., 6 figs., 1 tab.

Design of an electric apparatus based on M. A. Berliner's design, for ready determination of moisture in pulverised brown and bituminous coal. The functioning of the moisture meter is based on the measurement of the dielectric constant. The mean accuracy of measurment, for brown coals (size 0 ÷ 10 mm) and for bituminous coal (sizes 0 ÷ 3mm), amounts to ± 0.2% of total moisture. The apparatus can be used for controlling the industrial and laboratory drying of coals.

TOMKOV, K.
S. ROSINSKI, Przeglad Gorniczy, 1950, 6, 276-285.



F

E

3759. INFLUENCE OF VARIOUS FACTORS UPON YIELD OF BY-PRODUCTS IN LABORATORY CARBONISATION OF COAL AT HIGH AND LOW TEMPERATURES. Tookow, K. (Katowice: Prace Inst. Glar. Inst. Górn. (Res. Proc. Chief Inst. Min.), 1950, Kwartnik. CC, 12pp.). The influence of various factors on the yield of by-products in laboratory carbonisation of coal was investigated:- 1. Cracking temperature. 2. The various fillings of the cracking space. 3. Time of carbonisation. 4. The effect of coal gas, hydrogen and nitrogen feed on the coal charge and the cracking space. 5. The effect of superheated steam fed into the coal charge. It is shown that an essential factor influencing the yield and the quality of carbonization of by-products is the temperature of the cracking space. The yield of benzol increased, by 27.6%, when the coal gas was fed into the coal charge during carbonisation. The effect of superheated steam is chiefly to increase the tar and ammonia yield. Tar recovered under these conditions is like low temperature cartonisation tar. The effect of the other above mentioned factors proved insignificant. (L).

TOMKOV,P.

Transporting collective farm loads and workers. Avt.transp.33 no.8:38 Ag'55. (MLRA 8:12)
(Cherkassy--Transportation, Automotive)

VANEYEV, I.I.; GORLOVSKIY, S.I.; ZASHIKHIN, N.V.; LIPKINA, T.Ye.; Prinimali uchastiye: LAZAREVSKIY, A.F.; ZELENOVA, I.M.; VOLOSNIKOVA, T.F.; TOMKOVICH, Ye.I. [deceased]; PETROV, I.V.; MOSOLOV, M.V.; NIKIFOROVA, D.I.

Use of high molecular organic depressants in the flotation of copper-nickel ores. Obog. rud 6 no.2:3-9 '61. (MIRA 14:8)

(Flotation—Equipment and supplies) (Nonferrous metals)

ROGA, Blazej, prof.,dr.,inz.; TOMKOW, Kazimierz, mgr.,inz.

Classification of brown coal according to types. Przegl gorn 17 no.7/8:355-359 Jl-Ag '61.

KIELCZEWSKI, Wladyslaw; TOMKOWIAK, Jan

Determination of microgram amounts of cyanide by means of impregnated filter paper. Chem anal 5 no.6:889-892 '60. (EEAI 10:9)

1. Department of General Chemistry, School of Agriculture, Poznan.

(Cyanides)

KIELCZEWSKI, Wladyslaw; TOMKOWIAK, Jan

Determination of microgram amounts of silver by means of the paper impregnation method. Chem anal 7 no.5:925-929 '62.

1. Department of General Chemistry, School of Agriculture, Poznan.

CA

Catalytic hydrogenation of D-xylose by using Raney-nickel catalyst. Dezider Tomkuljak (Slovak Tech. Univ., Bratislava, Czech.). *Chem. Zvesti* 3, 220–24 (1949).—D-Xylose was hydrogenated according to French 604,421 (C.A. 25, 1840) at 30° and 1 atm. in a 10% aq. soln. and in 30% MeOH, and the reaction rate const. measured. If D-xylose is hydrogenated in H_2O with 30% of Raney Ni, D-xylonic acid produced by the Cannizzaro reaction decreases the pH of the soln. and the activity of the catalyst. The reaction rate decreases continuously and the hydrogenation lasts 3–4 days. When the amt. of catalyst is increased from 3 to 30%, the $Ca(OH)_2$ from 0.5 to 1.5% (based on xylose), and the solvent 4 times, the pH of the soln. and the activity of the catalyst are not changed, and the reaction rate is kept const. Hydrogenation at 30° and 1 atm. lasts about 24 hrs. By increasing the temp. up to 70°, the reaction time is decreased to 7–8 hrs., and 90% of the theoretical amt. of xylitol free of Ni, b$_{14}$ 220–30°, is formed.

Jan Micka

CA

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Acetone derivates of xylitol and their constitution. František Valentin and Dezider Tomkuljak (Slovak Tech. Univ., Bratislava, Czech.). *Chem. Zvesti* 3, 146-64(1949). —Diacetonexylitol was prepd. and its constitution detd. On treatment with Me_2CO and concd. H_2SO_4, xylitol (I) binds first 1 mol. of Me_2CO in a 6-membered heterocycle at positions 3 and 5 of the I mol., forming the amorphous monoacetonexylitol, $b_{0.5}$ 145-7°, n_D^{20} 1.4778. Prolonging the reaction time and increasing the amt. of the condensation agent gives diacetonexylitol, in which the 2nd mol. of Me_2C is bound at positions 1 and 2 of the sugar mol., forming a 5-membered heterocycle; the amorphous 1,2,-3,5-diacetonexylitol $b_{0.5}$ 99-101°, n_D^{20} 1.4534. The following derivs. of I were prepd. by oxidation with $Pb(OAc)_4$: 1,2,3,5-diacetone-4-tolylsulfonyl, cryst., m. 71-3°; 3,5-acetone-1,2,4-tribenzoyl, cryst., m. 103-4°; 3,5-acetone-1,2,4-trimethyl, amorphous, $b_{0.5}$ 69-71°, n_D^{20} 1.4324; 1,2,4-trimethyl, amorphous, $b_{0.5}$ 97-9°, n_D^{20} 1.4510; 1,2,3,5-diacetone-4-methyl, amorphous, $b_{0.5}$ 78-80°, n_D^{20} 1.4393; 3,5-acetone-4-methyl, amorphous, $b_{0.5}$ 109-11°, n_D^{20} 1.4003; 4-methyl, amorphous, $b_{0.5}$ 167-9°; 1,2,-3,5-tetrabenzoyl-4-methyl, cryst., m. 121-2°.

Jan Micka

CA

10

Rapid preparation o-nitroaniline and o-phenylenediamine. Dezider Tomkuljak. *Chem. Zvesti* 2, 114–19 (1948).—By modifying some conditions during the prepn. from AcNHPh and refluxing by superheated H_2O *in vacuo*, o-nitroaniline (I), m. 72.5°, was obtained in 60.0–3.4% yield and the time of prepn. was shortened to 12 hrs. From I by reduction with H and with Raney Ni as catalyst was obtained 90–5% o-$C_6H_4(NH_2)_2$, m. 103°.
Ian Micka

L 34982-66 EWT(l)/EWT(m)/EEC(k)-2/T/EWP(t)/ETI/EWP(k) IJP(c) WG/JD/JG/GG/
ACC NR: AP6016814 AT SOURCE CODE: UR/0371/65/000/006/0011/0018

AUTHOR: Belkind, A. I. (Belkinds, A.); Kalendarev, R. I. (Kalendarjovs, R.); Tomkus, I. S. (Tomkuss, I.)

ORG: Institute of Physics, AN LatSSR (Institut fiziki AN LatSSR)

TITLE: Multipurpose relaxation apparatus for measuring the signs of elementary processes in ionic crystals subjected to ionizing radiation

SOURCE: AN LatSSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk, no. 6, 1965, 11-18

TOPIC TAGS: relaxation process, ionizing radiation, ionic crystal, electron emission, thermoluminescence, photoluminescence

ABSTRACT: The authors point out that all the previously developed multipurpose installations ("relaxation combines") designed for the investigation of relaxation (transient) processes in ionic crystals exposed to ionizing radiation suffer from an important shortcoming in that they do not make it possible to determine one of the most important characteristics of the relaxation process, namely, its sign, in spite of the fact that the mechanism of the relaxation depends essentially on whether the relaxation process is electronic or of the hole-type. The authors therefore describe apparatus in which the sign of the elementary process is determined by means of thermally stimulated electron emission. An earlier version of the apparatus was already described (Tr. IFA AN ESSR, 1960, 12, 241). The apparatus is a combination of

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a spectrophotometer (SF-2M) and devices that produce and register luminescence and thermally stimulated electron emission. It permits simultaneous measurement of thermally stimulated luminescence, thermal discoloring, thermo-optical de-excitation, and thermally stimulated as well as photostimulated electron emission. Simultaneous measurement of absorption, luminescence, and electron emission can also be made while the sample is heated at a constant rate. The individual parts of the apparatus are described and results of measurements of NaCl(Tl) exposed to x rays are presented by way of an example. A detailed discussion of the results will be published in a separate article. The authors are grateful to Ch. B. Lushchik for suggesting the topic. Orig. art. has: 5 figures.

SUB CODE: 20/ SUBM DATE: 30Mar65/ ORIG REF: 013/ OTH REF: 005

POTSYUS, V.Yu. (Pocius, V.]; TOMKUS, I.S. [Tomkus, J.]

Background of nuclear emulsions used in studying the α-radioactivity of the atmosphere. Trudy AN Lit.SSSR.Ser. B no. 1:29-32 '63. (MIRA 17:5)

1. Institut geologii i geografii AN Litovskoy SSR.

STYRO, B.I.; GARBALYAUSKAS, Ch.A.; LUYANAS, V.I.; MATULYAVICHUS, V.P.; NEDVETSKAYTE, T.N.; TOMKUS, I.S.

Secondary dust component of radioactive contaminations in the bottom atmospheric layer. Atom. energ. 15 no.4:339-341 O '63. (MIRA 16:10)

S/236/63/000/001/004/015
D251/D308

AUTHORS: Potsyus, V. Yu. and Tomkus, I. S.

TITLE: On the question of the background of nuclear emulsions used in the study of α-radioactivity in the atmosphere

SOURCE: Akademiya nauk Litovskoy SSR. Trudy. Seriya B. no. 1, 1963, 29-32

TEXT: In connection with the study of radioactivity in the atmosphere, the authors investigate the background of nuclear emulsions of the A-2 type of thickness 50 μ, since the presence of this background may have a considerable effect on experimental results at low frequency levels. The α-tracks were observed with an МБИ-2 (MBI-2) microscope, with magnification x (675 - 1350). Testing of different nuclear emulsions showed that the general background increases daily by about 10 α-tracks/cm^2, but in the upper layer (10 μ) of the emulsion by only 0.5 α-tracks/cm^2. The increase of background with depth may indicate the presence of radio-atoms in the glass base or a contaminated under-layer. The

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D251/D308

On the question of ...

reduction in the number of tracks in the upper layer may also indicate that the regression of α-tracks proceeds more effectively when in direct contact with air. It is recommended that for the study of the radioactivity of the atmosphere the contact method of irradiating the emulsion should be used since in this case the majority of the α-tracks are situated in the surface layer, and in order to take into account the background according to the separate components in this layer. The composition by components as also the total background were studied using H_2O and H_2O_2 vapor, in a solution of $K_3Fe(CN)_6$, and in an atmosphere of oxygen. The use of H_2O_2 vapor and of a 1% $K_3Fe(CN)_6$ solution proved most effective, tests being made at 5-minute intervals in the latter case. The results of testing are presented in the form of a histogram, which takes the general form of a Poisson distribution with mode at 24 μ, but having a subsidiary peak at 40 μ. There are 1 figure and 3 tables.

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S/236/63/000/001/004/015
D251/D308

On the question of ...

ASSOCIATION: Institut geologii i geografii Akademii nauk Litovskoy SSR (Institute of Geology and Geography, AS Lithuanian SSR)

SUBMITTED: May 31, 1962

Card 3/3

TOMKUS, Yu.S. [Tomkus, J.]

Suitability of thermal characteristics of the vegetation period for the division of agroclimatic seasons. Trudy AN Lit. SSR. Ser. B. no.1:191-199 '64 (MIRA 17:7)

1. Institut geologii i geografii AN Litovskoy SSR.

TOMLAIN, J.

Time and space distribution of radiation balance components on Czechoslovak territory. Meteor zpravy 17 no.6:169-173 D '64.

Geographic distribution of the total radiation on Czechoslovak territory. Ibid.:173-177

1. Laboratory of Meteorlogy and Climatology of the Charles University, Prague.

SMOLEN, Frantisek; TOMLAIN, Josef

Calculation of individual surface heat components from gradient measurements. Meteor zpravy 18 no.1:15-17 F '65.

1. Laboratory of Meteorology and Climatology of the Slovak Academy of Sciences, Bratislava.

TOMLAIN, J.

Contribution to the determination of radiation balance by means of other meteorological characteristics. Meteor zpravy 16 no.6:169-170 D '63.

TOMLAIN, J.

Daily air pressure course in Turbanovo and on Lomnicky Stit Mountain. Meteor zpravy 16 no.2:32-35 Ap '63.

1. KAGM UK.

TOMLAIN, Jan, CSc.

Evaporativity on Czechoslovak territory. Vodohosp cas 12 no.3:303-318 '64.

1. Chair of Astronomy, Geophysics and Meteorology, Comenius University, Bratislava.

Tomlenov, A. D.

"Teoriya Plasticheskikh Deformatsiy Metallov", Mashgiz, 1951.

TOMLENOV, A. D.

SOROKIN, B.V., laureat Stalinskoy premii; ZVORONO, B.P., kandidat tekhnicheskikh nauk, retsenzent; TOMLENOV, A.D., kandidat tekhnicheskikh nauk, redaktor; MATVEYEVA, Ye.N., tekhnicheskiy redaktor; TIKHONOV, A.Ya., tekhnicheskiy redaktor.

[Dies for automobile body parts] Shtampy dlia oblitsovochnykh detalei avtomobilei. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1951. 217 p. (MLRA 8:1)
(Automobiles--Design and construction)
(Dies (Metal-working))

TOMLENOV, A. D.

"Theory of Plastic Deformation of Metals," 1951, 200 p., Sovetskaya Kniga (Soviet Books), 128 p., Pravda Publ. House, 1952.

Evaluation B-67710

TOMLENOV, A. D.

Plasticity

"Theory of plasticity." V. V. Sokolovskiy. Reviewed by S. I. Gubkin, A. D. Tomlenov. Izv. AN SSSR Otd. tekh. nauk, No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress November 1952 UNCLASSIFIED

TOMLENOV, A. D.

"Investigation of Stress Conditions in Forging and Stamping." Dr Tech Sci, Inst of Machine Studies, Acad Sci USSR, Moscow, 1953. Dissertation (Referativnyy Zhurnal--Mekhanika Moscow, Feb 54)

SO: SUM 186, 19 Aug 1954

KUKHTAROV, V.I.; KOROLEV, A.V., kandidat tekhnicheskikh nauk, retsenzent; L'VOV, D.S., kandidat tekhnicheskikh nauk, retsenzent; TOMILENOV, A.D., kandidat tekhnicheskikh nauk, redaktor.

[Work practice of fitter A.P.Moskovskii in making dies] Opyt raboty slesaria A.P.Moskovskogo po izgotovleniiu shtampov. Moskva, Gos. nauchno-tekhn. izd-vo Mashinostroitel'noi i sudostroitel'noi lit-ry, 1954. 73 p. (MLRA 7:8)
(Dies (Metalworking))

POPOV, V. A., kandidat tekhnicheskikh nauk; GLADKIKH, A.N., kandidat tekhnicheskikh nauk, retsezent; TOMLENOV, A.D., doktor tekhnicheskikh nauk, redaktor; UVAROVA, A.F., tekhnicheskiy redaktor.

[Cold upsetting of metals; experience of factories and the Organization for the Automobile Industry] Kholodnaia vysadka metallov; opyt zavodov i Orgavtoprema. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1955. 95 p. (MLRA 9:5)

(Sheet-metal work)

KUKHTAROV, Vladimir Ivanovich; TOMLENOV, A.D., doktor tekhnicheskikh nauk, retsenzent; SOKOLOVA, T.F., tekhnicheskiy redaktor

[Cold pressforming] Kholodnaia shtampovka. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 175 p. (MLRA 9:9)
(Sheet-metal work)

TOMLENOV, A.D.(Moskva).

Deep drawing thin-walled pieces with complicated configurations. Izv. AN SSSR.Otd. tekh.nauk no.11:100-102 N '56. (MLRA 10:1)
(Deep drawing (Metalwork))

TOMLENOV, A. D.

PHASE I BOOK EXPLOITATION 967

Akademiya nauk SSSR. Institut mashinovedeniya. Laboratoriya obrabotki metallov davleniyem

Voprosy obrabotki metallov davleniyem (Problems of Metal Forming) Moscow, Izd-vo AN SSSR, 1958. 85 p. 4,500 copies printed.

Resp. Ed.: Tselikov, A.I., Corresponding Member, USSR Academy of Sciences;
Ed. of Publishing House: Bankvitser, A.L.; Tech. Ed.: Guseva, I.N.

PURPOSE: This book is intended for scientific research workers and designers in the field of metal forming.

COVERAGE: This book contains 4 articles which discuss various theoretical aspects of metal forming, such as the theory of sheet-metal forming (drawing), the experimental design of complex drawing dies, and data on research work for determining the actual magnitude and character of forces in rolling of metals to achieve maximum utilization of power and reduction of weight of existing rolling equipment and of new machinery under construction.

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TABLE OF CONTENTS:

AVAILABLE: Library of Congress

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SEREP'YEV, Vyacheslav Vasil'yevich,; TOMLENOV, A.D.,prof.,doktor tekhn. nauk, red.; MEZHOVA, V.A.,red.izd-va,; MODEL', B.I.,tekhn. red.

[Experience in the construction of draw stages for automobile body parts] Opyt postroeniia vytiazhnykh perekhodov dlia oblitsovochnykh detalei avtomobilei. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 96 p. (MIRA 11:12)
(Deep drawing(Metalwork))
(Automobiles--Bodies)

SOV/137-59-3-6876

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 279 (USSR)

AUTHOR: Tomlenov, A. D.

TITLE: The Plastic State of Stress and the Stability of the Process of Drawing of Complex Shapes (Plasticheskoye narpyazhennoye sostoyaniye i ustoychivost' protsessa vytyazhki detaley slozhnoy formy)

PERIODICAL: V sb.: Vopr. obrabotki metallov davleniyem. Moscow, AN SSSR, 1958, pp 3-23

ABSTRACT: During die stamping of components having the shape of complex shells, the area of the blank immediately underneath the blank holddown ring is small in comparison with its total area. In the process of stamping, the entire area of the blank undergoes plastic deformation. The flanges of drawn articles are not flat and the stresses which exist in them are not axially symmetrical. By applying methods of the internal geometry of surfaces to an analysis of stresses arising in articles of complex shape, a natural extension of the theory of slip lines is obtained in a generalized form for the case of three-dimensional shapes. The stress analysis is conducted in the right orthogonal system of curvilinear coordinates. It was established, in

the course of an analysis of the stability of the drawing process, that the plasticity of the metal is enhanced in the process of drawing. The effect of friction is evaluated with the aid of the Euler formula which acquires a somewhat modified form in the case of biaxial displacement of metal. The biaxial state of stress, which arises in the process of drawing of complex shapes, is a desirable condition which enhances the plasticity of the metal and is attributable to the greater stability of the process. Strain hardening of metal in the process of biaxial elongation favors large plastic deformations during stamping operations. σ_b and δ values in simple tension are the most important characteristics of sheet metal governing its suitability for drawing.

M. Ts.

TOMLENOV, A.D., doktor tekhn. nauk, prof.

Theory of drawing complex shaped parts. Vest. mash. 38 no.1:53-56 Ja '58. (MIRA 11:1)

(Drawing (Metalwork))

TOMLENOV, A.D., prof., doktor. tekhn. nauk

Theory of hydrostatic testing of sheet metals. Vest.mash. 38 no.10:47-49 O '58. (MIRA 11:11)
(Sheet steel--Testing)

Tomlenov, A.D.

11(2,4) PHASE I BOOK EXPLOITATION SOV/2536

Moscow. Institut neftekhimicheskoy i gazovoy promyshlennosti.

Problemy nefti i gaza (Oil and Gas Problems) Moscow, Gostoptekhizdat, 1959. 362 p. (Series: Its: Trudy, vyp 24) Errata slip inserted. 2,000 copies printed.

Sponsoring Agency: Ministerstvo vysshego obrazovaniya SSSR.

Exec. Ed.: G. F. Morgunova; Tech. Ed.: I. G. Fedotova; Editorial Board: K. F. Zhigach, Professor (Resp. Ed.), I. M. Murav'yev, Professor, A. A. Tikhomirov, Candidate of Economic Sciences, V. N. Vinogradov, Candidate of Technical Sciences, M. M. Charygin, Professor, F. F. Dunayev, Professor, I. A. Charnyy, Professor, V. N. Dakhnov, Professor, G. M. Panchenkov, Professor,

PURPOSE: This collection of articles is intended for specialists in the petroleum and gas industry. It will also be of interest to scientific research institutes, teachers and students of vuzes.

COVERAGE: This collection of articles reviews problems connected with natural and synthetic gas production. A number of articles are devoted to the study of regional oil- and gas-bearing zones, the crystalline beds underlying the Volga-Urals petroliferous region, tectonics of the Caspian depression, seismic prospecting, oil well logging, development of oil and gas fields, petroleum-bearing formations and their physicochemical characteristics, and petroleum engineering. Other articles deal with gas turbine engines and their possible use in the oil and gas industry, the production of carboxy-methylcellulose compounds, the application of ionic exchange tars to the organic catalysis, continuous coking of heavy petroleum residues, (fluidization), the improvement of lube oil production, and the influence of acid esters on properties of lubricating oil and grease. The book contains a number of photographs, tables, flow sheets, and diagrams, among which those relating to coal gasification and conversion of heavy petroleum residues over a fluidized bed catalyst deserve special attention. References accompany individual articles.

Tomlenov, A.D.

28(1) PHASE I BOOK EXPLOITATION SOV/2156

Soveshchaniye po kompleksnoy mekhanizatsii i avtomatizatsii tekhnologicheskikh protsessov. 2nd, 1956.

Avtomatizatsiya mashinostroitel'nykh protsessov; /trudy soveshchaniya/, tom. 1: Goryachaya obrabotka metallov (Automation of Machine-Building Processes; Proceedings of the Conference on Over-All Mechanization and Automation of Technological Process, Vol 1: Hot Metal-Forming) Moscow, 1959. 394 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya.

Resp. Ed.: V.I. Dikushin, Academician; Compiler: V.M. Raskatov; Ed. of Publishing House: V.A. Kotov; Tech. Ed.: I.P. Kuz'min.

PURPOSE: The book is intended for mechanical engineers and metallurgists.

COVERAGE: The transactions of the Second Conference on the Over-All Mechanization and Automation of Industrial Processes, September 25-29, 1956, have been published in three volumes. This book, Vol. I, contains articles under the general title, Hot Working of Metals. The investigations described in the book were conducted by the Sections for Automation and Hot Working of Metals, under the direction of the following scientists: casting - F.N. Aksenov, D.F. Ivanov and G.M. Orlov; forming - A.I. Taelikov, A.D. Tomlenov and V.T. Meshcherin; welding - G.A. Nikolayev, B.I. Prolov and G.A. Maslov. There are 183 references: 142 Soviet, 34 English, 6 German, and 1 French.

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PHASE I BOOK EXPLOITATION SOV/3416

Akademiya nauk SSSR. Institut mashinovedeniya

Voprosy prochnosti materialov i konstruktsiy (Problems of Strength of Materials and Structures) Moscow, 1959. 399 p. Errata slip inserted. 3,200 copies printed.

Resp. Ed.: D. N. Reshetov, Professor, Doctor of Technical Sciences; Ed. of Publishing House: G. B. Gorshkov; Tech. Ed.: S. T. Shikin.

PURPOSE: This book is intended for engineers and scientists concerned with the problems of the strength of materials and construction.

COVERAGE: The book contains 28 articles on the strength of materials in general and of machine construction in particular. This collection was prepared under the direction of the Institute of Mechanical Engineering of the AS USSR in honor of Sergey Vladimirovich Serensen, one of the founders and directors of the national school of strength of materials, who recently completed 30 years of scientific activity. The preface gives a short sketch of his life and professional activities. The collection is divided into two parts. The first part contains 13 articles on general problems of strength and the strength of machine construction materials. The second part contains 15 articles on dynamics and calculation of strength and rigidity. There are references at the end of each article.

AVAILABLE: Library of Congress

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TOMLENOV, A.D.

25(1) PHASE I BOOK EXPLOITATION SOV/2944

Gubkin, Sergey Ivanovich (Deceased), Mikhail Vasil'yevich Storozhev, Boris Pavlovich Zvorono, Vasiliy Fedorovich Katkov, Ilariy Anatol'yevich Noritsyn, Yevgeniy Aleksandrovich Popov, Georgiy Aleksandrovich Shirnov-Alyayev, Aleksandr Vasil'yevich Tomlenov, Yevgeniy Pavlovich Unksov, and Leopold Adol'fovich Shofman

Osnovy teorii obrabotki metallov davleniyem (Fundamentals of the Theory of Metal Forming) Moscow, Mashgiz, 1959. 538 p. Errata slip inserted. 7,500 copies printed.

Ed.: M. V. Storozhev; Ed. of Publishing House: A. I. Sirotin, Engineer; Tech. Ed.: B. I. Model'; Managing Ed. for Literature on Heavy Machine Building (Mashgiz): S. Ya. Golovin, Engineer.

PURPOSE: This book is intended for engineers and scientific workers studying the theoretical problems of metal forming.

COVERAGE: This collective work purportedly reflects the contemporary trends in the development of the metal-forming theory. Emphasis is given to methods of calculating forces and deformations. The use of these methods is illustrated in analysis of smith- and drop-forging operations. No personalities are mentioned. There are 227 references: 197 Soviet, 17 German, and 13 English.

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SOV/122-59-3-14/42

AUTHOR: Tomlenov, A.D., Doctor of Technical Sciences, Professor

TITLE: Features of Calculating the Stressed State Caused by Forging Between Flat Dies (Ob osobennostyakh rascheta napryazhennogo sostoyaniya, voznikayushchego pri kovke ploskimi boykami)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 3, pp 46-47 (USSR)

ABSTRACT: D.K. Chernov (1867) and James Nasmyth (1885) are both said to have pointed out that round axle shafts, when forged between flat dies or strikers, are subject to internal tensile forces causing cracks, and that this can be prevented if the axles are forged between shaped dies. The stressed state occuring at points on a shaft compressed between flat dies (Fig 1) is calculated from Mises-Henckey integrals and the principal stress is found by use of Mohr circles in terms of specific pressure, p , to be given by Eq (7). The value p_{max} is found by using Prandtl's formula (Ref 4); it is given by Eq (14). Using Eqs (7) and (14) the maximum tensile stresses arising in the central section of the blank can be calculated. A table on p 47 gives the magnitude of the stresses in relation to the specific pressure on the dies

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Features of Calculating the Stressed State Caused by Forging Between Flat Dies

for different ratios of shaft diameter to width of die. Fig 3 shows the stress profile through the shaft when this ratio is 8.15. The tensile stress at the centre is considerable and may give rise to axial or transverse cracks if the metal is insufficiently plastic, or at too low a temperature during forging. The use of insufficiently powerful forging presses and too narrow dies can lead to transverse cracks. The proper solution, as pointed out by Chernov and Nasmyth, is to use shaped dies. There are 3 figures, 1 table and 7 references, 3 of which are Soviet, 2 German and 2 English.

S/137/60/000/009/007/029
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 9, p. 120, # 20364

AUTHOR: Tomlenov, A.D.

TITLE: Plastic Bi-Axial Tensile Strength

PERIODICAL: Tr. Mosk. in-t neftekhim. i gaz. prom-sti, 1959, No. 24, pp. 170-173

TEXT: The author analyzes losses of strength of the second order occurring at a moment corresponding to maximum tensile forces. This is caused by the insufficient compensation of the stress increase due to a decrease in the modulus of metal strengthening, diminishing with greater deformation. On the basis of calculations presented, it is shown that the critical value of changes in the metal thickness during bi-axial stretching is 4 times higher than in uni-axial stretching.

M.Ts.

Translator's note: This is the full translation of the original Russian abstract.

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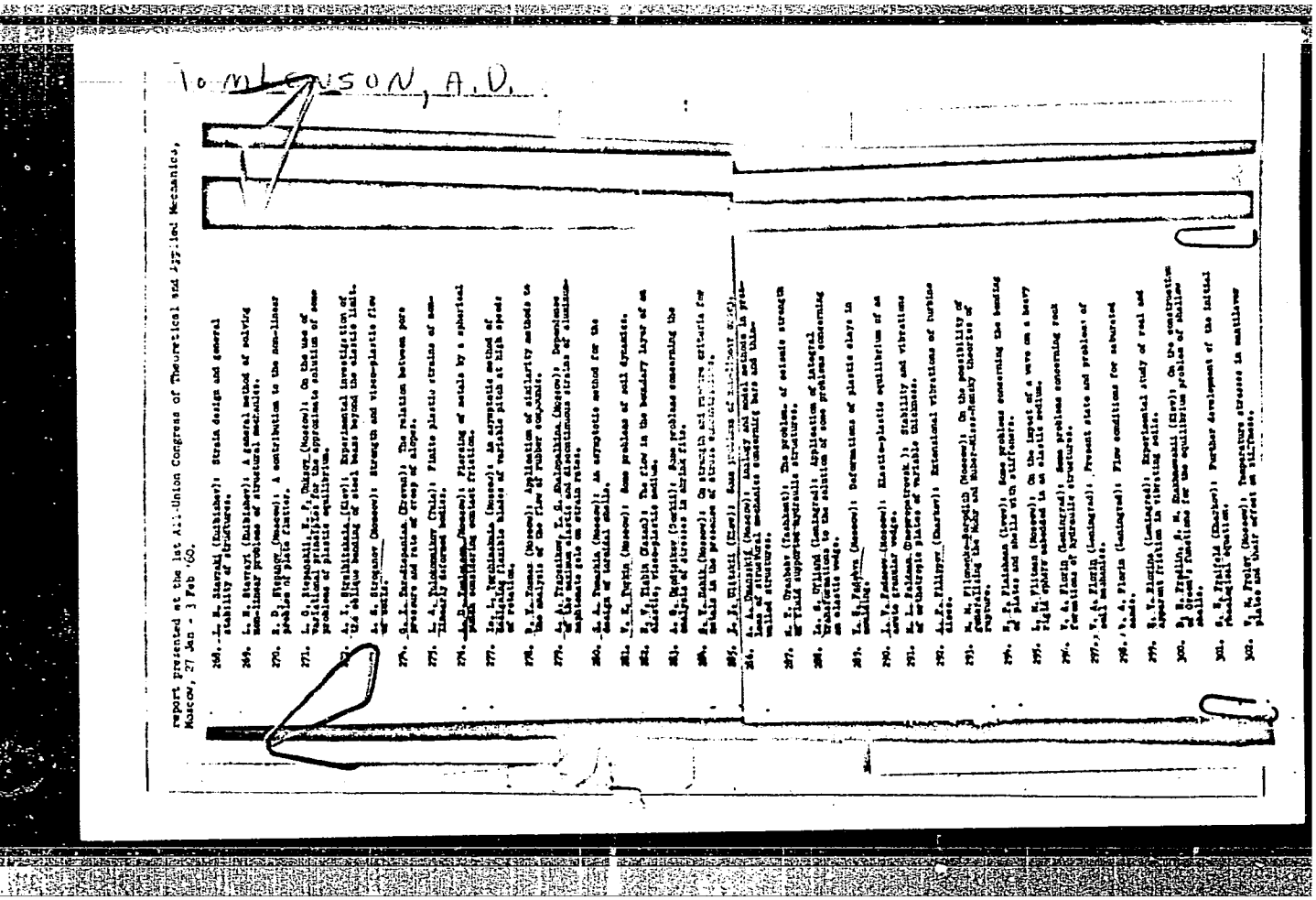

To MELSON, A.D.

report presented at the 1st All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

268. L. N. Sternal (Dnipro): Strain design and general stability of structures.

269. L. N. Sternal (Dnipro): A general method of solving non-linear problems of structural mechanics.

270. E. D. Pinegar (Moscow): A contribution to the non-linear problem of plate flutter.

271. L. G. Stepanoff, E. F. Dainer (Moscow): On the use of Variational principles for the approximate solution of some problems of plastic equilibrium.

272. A. L. Strelitzkiy (Kiev): Experimental investigation of the oblique bending of steel beams beyond the elastic limit.

273. A. E. Sturgeon (Moscow): Strength and visco-plastic flow of metals.

274. G. L. Sardinopulos (Trieste): The relation between pore pressure and rate of creep of clays.

275. L. A. Tolcmonkiy (Chile): Finite plastic strains of non-linearly deformed bodies.

276. A. D. Melson (Moscow): Plotting of metals by a spherical punch considering contact friction.

277. Iu. I. Temlianskii (Moscow): An asymptotic method of solving flexible plates of variable pitch at high speeds of rotation.

278. E. M. Tomas (Moscow): Application of similarity methods to the analysis of the flow of rubber compounds.

279. A. A. Tsigankov, L. G. Shaipakhiia (Moscow): Dependence of the maximum elastic and discontinuous strains of aluminum-magnesium alloy on strain rates.

280. A. A. Tumarkin (Moscow): An asymptotic method for the design of toroidal shells.

281. E. E. Tsvetkin (Moscow): Some problems of soil dynamics.

282. E. V. Tsiuin (Kiev): The flow in the boundary layer of an elastic, visco-plastic medium.

283. A. S. Vaitsitser (Tomsk): Some problems concerning the analysis of stresses in arched ribs.

284. A. V. Vakh (Moscow): On strength and reserve criteria for metals in the presence of stress concentrators.

285. A. A. Vlasov (Kiev): Some problems of [illegible] shells.

286. A. A. Vorovich (Moscow): Analog and model methods in problems of structural mechanics concerning beam and thin-walled structures.

287. E. I. Grabner (Frankfurt): The problem of seismic strength of high supported hydraulic structures.

288. A. S. Vylkov (Leningrad): Application of integral transformations to the solution of some problems concerning an elastic wedge.

289. I. A. Feldzen (Moscow): Deformations of plastic clays in cooling.

290. Iu. N. Fedorov (Moscow): Elastic-plastic equilibrium of an axis-symmetric wedge.

291. N. I. Feinen (Dnepropetrovsk): Stability and vibrations of orthotropic plates of variable thickness.

292. A. F. Filippov (Chartov): Torsional vibrations of turbine discs.

293. M. M. Filonenko-Borodich (Moscow): On the possibility of establishing the Mohr and Mohr-Coloumb theories of rupture.

294. G. F. Fisikhenko (Ivov): Some problems concerning the bending of plates and shells with stiffeners.

295. L. E. Fliess (Moscow): On the impact of a wave on a hard rigid sphere embedded in an elastic media.

296. L. A. Florin (Leningrad): Some problems concerning rock formations of hydraulic structures.

297. V. A. Florin (Leningrad): Present state and problems of soil mechanics.

298. N. A. Floria (Leningrad): Flow conditions for saturated sands.

299. N. T. Florina (Leningrad): Experimental study of rest and apparent friction in vibrating soils.

300. A. B. Fraiin, A. M. Rashkovskii (Kiev): On the construction of exact solutions for the equilibrium problem of hollow shells.

301. E. E. Frolfeld (Dnepr): Further development of the initial modulus theorem.

302. V. M. Frolov (Moscow): Temperature stresses in multilayer plates and their effect on thickness.

PHASE I BOOK EXPLOITATION SOV/5013

Akademiya nauk SSSR. Institut mashinovedeniya

Issledovaniya v oblasti obrabotki metallov davleniyem (Investigations in the Field of Metal Pressworking) Moscow, Izd-vo AN SSSR, 1960. 66 p. Errata slip inserted. 4,200 copies printed.

Resp. Ed.: A.D.Tomlenov; Ed. Of Publishing House: G.Ye. Pevzner; Tech. Ed.: S.P. Golub'.

PURPOSE: This collection of articles is intended for engineers, designers, and scientific research workers engaged in the plastic working of metals.

COVERAGE: Articles of the collection deal with the following problems: tensile stresses in metal during forging and cross-rolling; deformation of a membrane in bulging by hydraulic pressure; intensification of plastic deformation in stamping; contact area under the state of stress in helical cross-rolling on a three-roll mill; testing of sheet steel for biaxial tension by the method of bulging a membrane under hydraulic pressure; deformability of sheet steel; determination of the quality of industrial lubricants used in the cold stamping of sheet steel;

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determination of the quality of carbon sheet steel; and the temperature field of a blank in the hot stamping of steel plates. No personalities are mentioned. Each article contains conclusions based on investigations. References, predominantly Soviet, accompany most of the articles.

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5-1-61

S/122/60/000/001/012/018
A161/A130

AUTHOR: Tomlenov, A. D., Doctor of Technical Sciences, Professor

TITLE: Penetration of rounded punch into metal with friction

PERIODICAL: Vestnik mashinostroyeniya, no. 1, 1960, 56-58

TEXT: The article presents an analysis of the case of a rounded punch and metal of ideal plasticity. The problem of the penetration of curved-outline punch in different friction conditions had been solved previously by V. V. Sokolovskiy [Ref. 1: Teoriya plastichnosti (Theory of plasticity), Gostekhizdat, 1950], and the problem of the penetration of a rounded punch in the absence of friction on the surfaces and of deformations in directions at right angles to the meridian punch sections by the author [Ref. 2: Teoriya plasticheskikh deformatsii (Theory of plastic strain), Mashgiz, 1951]. The slip band network had been constructed graphically by L. Prandtl (Ref. 3: Anwendungsbeispiel zu einem Henkischen Satz ueber Plastisches Gleichgewicht, ZAMM, Bd. 3, no. 6, 1923). The contact friction is assumed proportional to the yield limit, and the stress pattern considered to be two-dimensional. The closed solution obtained includes a slip band equation and formulae for calculation of stresses and forces. The

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slip bands network is shown in a figure. The tangential stresses on the contact surface ($\tilde{\tau}_K$) are determined by the friction factor value

$$|\tilde{\tau}_K| = \mu 2K \qquad (1)$$

where μ is the mean friction factor value; K - the plasticity constant. The α angle composed by the straight slip band lines with the tangent to the outline is determined by the friction factor:

$$2\alpha = \arccos 2\mu. \qquad (2)$$

The slip band field is determined by the boundary conditions. In the abc area the grid consists of straight lines; in the acn area the lines form a centered fan, and in the eifan area they make a noncentered fan. The radius-vector of any h point of the curved slip band is

$$\bar{\rho} = r\bar{e}(\psi) - \lambda \frac{d}{d\psi} \bar{e}(\psi + \alpha) = r\bar{e}(\psi) - \lambda \bar{g}(\psi + \alpha) \qquad (3)$$

where r is the punch end radius; ψ - angle between the radius of and the axis x; $\bar{e}(f)$ and $\bar{g}(\psi)$ - circular vector functions being determined as unit vectors forming the angles ψ and $\psi + \frac{\pi}{2}$ with the axis ox; λ - a parameter equalling the fh length in absolute value. The λ is eliminated in further derivation of the vector equation of slip bands:

Penetration of rounded punch ...

$$\bar{\rho} = r\,[e\,(\psi) - (\psi - \psi_1)\cos\alpha\,\bar{g}\,(\psi + \alpha)], \tag{7}$$

or, in scalar form considering the relation (2):

$$\rho^2 = r^2\,[1 - (\psi - \psi_1)\sqrt{1 - 4^2} + (\psi - \psi_1)^2\,(0.5 + \mu)]. \tag{8}$$

The mkie area presents the area of plastic equilibrium moving with the punch as a rigid body. Its boundaries (the ie and me lines) are the rupture lines for speeds. Considerable deformations appear in a thin metal layer along these lines, and the result may be local workhardening and lamination of metal along the plastic equilibrium area boundary. The boundaries of this area are determined by the condition that the slip bands ei and em cross the punch axis at a $\frac{\pi}{4}$ angle, and

$$\psi_o = \frac{\pi}{4} - \alpha. \tag{9}$$

At $\alpha = 0$ the friction factor is highest ($\mu = 0.5$), and limited by the plasticity. The slip bands are the involutes of the punch outline in this case, and the mean normal stress values and the turn angles of the tangents are bound by the Henky integral. For the ft slip band this integral is

$$\sigma_f - \sigma_t = -2K\varphi, \tag{11}$$

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where σ and σ are the mean normal stresses in the f and t points, and φ - the turn angle of the tangent of the slip band in the ft length. The σ_f and σ_t values are found by constructing the Mor's circles for the f and t points:

$$\sigma_f = \sigma_n + K \sin 2\alpha, \tag{12}$$

where φ_n is stress directed at right angles to the punch outline, and

$$\sigma_t = -K. \tag{13}$$

The is found from the figure:

$$\varphi = \frac{3\pi}{4} - \psi - \alpha. \tag{14}$$

The values found in (12) and (13) are substituted into the equation (11), and σ_n is found as

$$\sigma_n = -2K(\theta - \psi), \tag{15}$$

where

$$\theta = \frac{3\pi}{4} - \frac{\arccos 2\mu}{2} + \frac{\sqrt{1 - 4\mu^2}}{2} + 0.5 \tag{16}.$$

For a particular case without friction (2), $\mu = 0$, and consequently

$$\sigma_n = -2K\left(1 + \frac{\pi}{2} - \psi\right) \tag{17}$$

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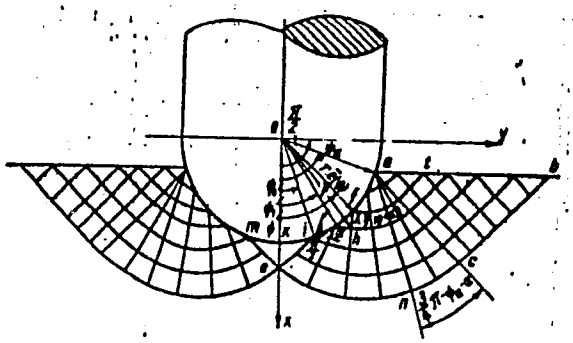
The specific pressure value related to the cross section area of the punch is determined by the integral from the normal and tangential stress components, taken on the contact surface:

$$\frac{p}{2K} = \frac{\sin^2\psi_0}{2} + (\theta - \psi_\alpha)\sin^2\psi_\alpha + \frac{[(2\psi_\alpha - \sin 2\psi_\alpha) - (2\psi_0 - \sin 2\psi_0)](1 + \cos 2\alpha)}{4} \quad (18)$$

and in particular case without contact friction (Ref. 2), formula (18) becomes

$$\frac{p}{2K} = \left(1 + \frac{\pi}{2} - \psi_\alpha\right)\sin^2\psi_\alpha + \frac{2\psi_\alpha - \sin 2\psi_\alpha}{4}. \quad (19)$$

There are: 1 figure and 3 references;
2 Soviet-bloc and 1 non-Soviet-bloc.



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KUKHTAROV, Vladimir Ivanovich; KUKHTAROV, Oleg Vladimirovich; TOMLENOV, A.D., doktor tekhn.nauk, retsenzent; ZVORONO, B.P., kand.tekhn. nauk, red.; OSIPOVA, L.A., red.izd-va; MODEL', B.I., tekhn.red.

[Dies for cold sheet stamping] Shtampy dlia kholodnoi listovoi shtampovki. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1960. 320 p. (MIRA 13:5)
(Dies (Metalworking)) (Sheet-metal work)

S/182/60/000/007/002/016
A162/A029

AUTHOR: Tomlenov, A.D.

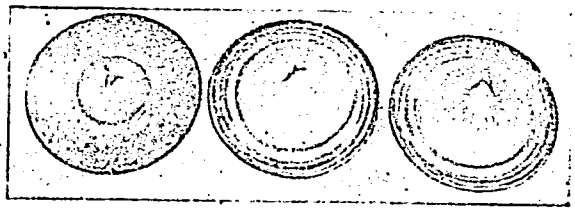
TITLE: Theory of Testing Sheet Metal at High Deformation Speeds

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 7, pp. 5 - 6

TEXT: The Laboratoriya obrabotki metallov davleniyem (the Laboratory of Metalworking by Pressure) of IMASh AN SSSR (the IMASh of the AS of the USSR) has developed a new method for testing sheet steel and its suitability for deformation by stamping. The method principle for metal testing consists of a hydraulic stroke with biaxial drawing and has been granted the Author's Certificate No. 115711 (Ref. 4) in 1958. Round sheet specimens used in this test are shown in a photo. The theory of the method is explained. It includes the use of known formulae (Korteweg, Bernoulli) of shock wave propagation. The mean total stroke pressure p_m is calculated by the formula $p_m = \frac{GH\eta}{q}$ where q is the volume fluid displaced by the stroke; G - the weight of falling parts of the test instrument; H - the height of the drop; and η - the stroke efficiency (calculated by formula (24)). Knowledge of the summary pressure in the instrument (p_s), the

Theory of Testing Sheet Metal at High Deformation Speeds

shape and dimensions of the deformed specimen, stresses and deformations forming in the test can be calculated. The calculation is based on approximation of the generatrix of the deformed specimen surface by a 4-th degree polynomial and the corresponding equivalent can be calculated by using the formula (21). The behavior of sheet steel can be investigated in a wide test speed range. Biaxial drawing in tests permits considerably higher deformations than uniaxial, and the accuracy of determination is higher. There is 1 photo and 8 references: 5 Soviet, 2 British, 1 Dutch.



Samples of Sheet Steel Deformed by a Shock Wave

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TOMLENOV, A.D.

Conference on the formation and testing of thin sheet steel.
Vest.AN SSSR 30 no.9:90-91 S '60. (MIRA 13:9)
(Sheet steel)

S/902/62/000/000/010/015
E193/E383

AUTHOR: Tomlenov, A.D.

TITLE: Theory of hydrodynamic testing of metal sheet

SOURCE: Novyye protsessy obrabotki metallov davleniyem; doklady Soveshch. po novym prots. obrab. met. davleniyem v mashinostr., 1960. Ed. by V. D. Golovlev. Moscow, Izd-vo AN SSSR, 1962. 117 - 120

TEXT: A new method of testing the deep-drawing properties of steel sheet has been developed at the metal-working laboratory of the Institut mashinovedeniya (Institute of Science of Machines). The method, based on the application of hydraulic impact created by a drop-hammer, is schematically demonstrated in Fig. 1, showing: 1 - anvil block; 2 - dynamometer; 3 - piston; 4 - cylinder; 5 - test piece; 6 - clamping nut; (when the piston 3 is made to hit the dynamometer 2 a pressure wave generated in the fluid contained in the cylinder deforms a circular test piece). In the present paper, concerned with the theory of the method, several formulas are derived, including formulas for the velocity

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of the pressure wave, total pressure of the liquid in the cylinder and, finally, the total impact pressure P_m :

$$P_m = \frac{GH\eta}{q} \qquad (26)$$

where G is the weight of the falling parts of the drop-hammer, H the height of the drop, η the coefficient of the effective action of the impact and q the volume of liquid displaced by the impact. The stresses and strains during dynamic testing of steel sheet can be calculated from the calculated values of P_m and data on the shape and dimensions of the test piece. The equivalent velocity w can be found from the formula:

$$w = \sqrt{aCv} \qquad (43)$$

where a is a coefficient taking into account the reflection of the impact wave, C is the wave velocity and v the impact velocity. There is 1 figure.

TOMLENOV, A.D.

Effect of friction on the force required to press-in a rounded punch. Kuz.-shtam. proizv. 3 no. 2:1-3 F '61. (MIRA 14:1)
(Sheet-metal work) (Friction)

TOMLENOV, A.D.

Approximate energy method of determining stresses producing plastic flow in metals. Kuz.-shtam. proizv. 4 no.3:8-11 Mr '62. (MIRA 15:3)
(Strains and stresses) (Deformations (Mechanics))

S/182/62/000/004/001/006
D038/D113

19 5100

AUTHOR: Tomlenov, A.D.

TITLE: The effect of sheet metal anisotropy on plastic deformation processes

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, no. 4, 1962, 1-2

TEXT: Referring to non-Soviet experiments (R.L. Whiteley, D.E. Wise and D.J. Blickwedl. Drawability and anisotropy of metals. Colloque sur la mise en forme des tôles minces et les essais de tôles, Paris, 1960) in which it was shown that sheet metal anisotropy is important in plastic deformation processes, the author shows that the results of the experiments agree well with the anisotropy theory and that empirically determined anisotropic features have a definite physical purport. Included equations permit experimentally evaluating sheet metal anisotropy and estimating the accuracy of the anisotropy theory, the mean coefficient of anisotropy, and the effect of anisotropy during experimental and theoretical investigations of processes for drawing parts of complicated shape.

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X

TOMLENOV, A.D., doktor tekhn.nauk, prof.

"Plasticity for mechanical engineers" by W.Johnson, P.B.Mellor. Reviewed by A.D.Tomlenov. Kuz.-shtam. proizv. 4 no.9:48 S '62. (MIRA 15:9)
(Deformations (Mechanics)) (Johnson, W.) (Mellor, P.B.)

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S/030/62/000/005/003/006
B117/B102

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AUTHOR: Tomlenov, A. D., Professor

TITLE: Theory of plastic deformation of metals

PERIODICAL: Akademiya nauk SSSR. Vestnik, no. 5, 1962, 75-77

TEXT: This is a theoretical study of metal-working processes, some conventional and some new, which take advantage of the plasticity of metals. Plastic deformation resulting from pressure involves complex processes which can be explained by the theory of plasticity. In the case of actual metal-working processes, those problems in the theory of plasticity which as a rule are extremely difficult to solve mathematically can be simplified without rendering the solution inaccurate, if some parameters are either constant or functions of other parameters. In most cases solving the three-dimensional problem is reduced to solving the corresponding axially symmetrical problem (e.g., in wire drawing) or plane plasticity problem (e.g., in steel sheet rolling). An approximate solution of the spatial problem may be had if the stresses distributed over various cross sections of the deformable subject are considered as individual uniplanar problems.

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B117/B102

Theory of plastic deformation...

Theories based on ideal plasticity can be applied in studying the deformation of hot metals, since whatever solidification of metals takes place during the plastic flow is negligible at high temperatures. Deformation of cold metal by pressure can be calculated on the assumption of ideal plasticity or on that of plastic flow without solidification, since the solidification intensity decreases with increasing deformation. The parameter assumed here is the yield point of solidified metal. Cross-screw hot rolling has been introduced and successfully applied to machine construction in USSR during present years. As regards productivity, this continuous method is far superior to hot punching. There are good prospects also for cold punching. The application of these methods is, however, restricted by extremely high specific pressures during the working process and by cracking of the material under high stresses. Theoretical studies of states of stress during cross-screw hot rolling made it possible to find out the causes for the formation of interior cracks and to develop preventive measures. The effect of friction still remains to be investigated and methods of controlling this phenomenon need to be developed. Pilot plants for the production of steel sections by hot-pressing are at present under construction. This method involves the solution of problems relating to the determination of state of stress and rate of flow in the inhomogeneous temperature field with varying

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